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## ABSTRACT OF THE DISCLOSURE

Apparatus for producing a carbon structure at least including two electrodes 11 and 12 having forefront portions opposed to each other, and a power supply 18 for applying a voltage between the electrodes 11 and 12 so that discharge plasma is produced in a discharge area between the electrodes 11 and 12. The apparatus for producing a carbon structure further including a magnetic field generating unit 20 to 23 for forming at least a magnetic field including multidirectional lines of magnetic force or a magnetic field including a component parallel with the traveling direction of a discharge current, in an area where the discharge plasma is generated. In addition, a method for producing a carbon structure, using such an operation.